

reference of Oehler et al. (U.S. Patent No. 5,820,927); rejected claims 8-10, and 12 under U.S.C. 103(a) as being unpatentable over KR 8902848/JP 780100390/JP 78020780 in view of the reference of Rosenblatt (U.S. Patent No. 6,365,169).

**Rejection under 35 U.S.C. 102(b) to  
KR 8902848, Minami, or Takahashi et al.**

Applicant's method claims 8 and 9 stand rejected under 35 U.S.C. 102(b) as being anticipated by the reference KR 8902848, the reference of Minami (U.S. Patent No. 3,866,568) or the reference of Takahashi et al. (U.S. Patent No. 5,567,539). The Applicant respectfully disagrees with the Office's aforementioned rejection of Applicant's method claims 8 and 9.

In regards to Applicant's independent method claim 8, Applicant's independent method claim 8 calls for a method of applying a water treatment composition to an article including the step of:

“...applying a metal ion yielding material in particle form to the adhesive on the web ....” (Emphasis added.)

The Applicant respectfully submits that a review of the references of Minami and Takahashi et al. reveal that the references of Minami and Takahashi et al. each do not teach the step of applying metal ion yielding materials in particle form to an adhesive on a web.

In regards to the reference KR 8902848, it is submitted that the reference KR 8902848 also does not teach the step of applying of metal ion yielding material in particle form to the adhesive. It is noted that a review of the copy of the reference KR 8902848 obtained from

the Office revealed that reference KR 8902848 fails to teach the application of silver active carbon and untreated active carbon to an adhesive. To the contrary, the Applicant respectfully submits that KR 8902848's disclosure of:

"... filling between two ... permeable nonwoven fabrics (coated with adhesive on the inner side only) with silver-added active carbon ... and untreated active carbon by alternating the silver-added active carbon and untreated carbon in repetition; in repeating ..." (emphasis added.)

teaches away from the step of "applying a metal ion yielding material in particle form to the adhesive." Note for example that the "filling" between the two permeable nonwoven fabrics with silver-added active carbon and untreated active carbon requires the presence of a pocket or compartment located between the two permeable nonwoven fabrics for receiving the active carbons. The presence of an adhesive located on the interior walls of the pocket or compartment would cause the region of the two permeable nonwoven fabrics comprising the pocket or compartment to secure to each other thereby leading to the collapse of the pocket or compartment.

In further regards to KR 8902848, note that although the reference KR 8902848 (in the abstract) discloses in parentheses that the inner side of the nonwoven fabrics is coated with adhesive, the Applicant respectfully submits that the adhesive cited in KR 8902848 is for bonding KR 8902848's sheets of fabrics 11' and 11" together to prevent the sheets of fabrics 11' and 11" from blistering. (See page 4 of the Applicant's translation of the KR 8902848 reference, a copy of which was previously submitted with the Office.) The Applicant further submits that the KR 8902848 reference teaches away from the use of an adhesive to secure the silver-added active carbon and untreated active carbon to fabrics 11'

and 11" through the disclosure on page 4, lines 24-26 of the Applicant's translation of the KR 8902848 reference that:

"... the mesh of the fabrics is finer than the activated carbon, which thereby is prevent from being release."

In view of KR 8902848's above disclosure, the Applicant respectfully submits that there lacks a need for securement of the silver-added active carbon and untreated active carbon to KR 8902848's fabrics 11' and 11" as the mesh formed by fabrics 11' and 11" already functions to prevent the silver-added active carbon and untreated active carbon from escaping or releasing from filter 8. (See Figures 3, 4, 5, and 6 of the KR 8902848 reference.)

In further regards to the Office's above rejections, the Applicant respectfully notes that the Office is currently rejecting Applicant's claims 8 and 9 under 35 U.S.C. 102(b) as being anticipated by the references KR 8902848, Minami or Takahashi et al. In *ATD Corp. v. Lydall, Inc.*, Fed. Circuit held that in order for a reference to anticipate, the :

"... anticipating reference must describe the patented subject matter with sufficient clarity and detail to establish that the subject matter existed and that its existence was recognized by persons of ordinary skill in the field of the invention."<sup>1</sup>

In view of *ATD Corp. v. Lydall, Inc.*, the Applicant respectfully submits that the references of Minami and Takahashi et al. each does not anticipate Applicant's claim 8 as the references of Minami and Takahashi et al. each does not teach the application of a metal ion yielding material to the adhesive on a web. The Applicant also respectfully submits

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<sup>1</sup> *ATD Corp. v. Lydall, Inc.*, 48 USPQ 2d 1321, 1328 (Fed. Cir. 1998)

that the KR 8902848 reference does not anticipate Applicant's independent claim 8 as reference KR 8902848 does not describe with sufficient clarity and detail the use and function of the adhesive so as to anticipate the step of "...applying a metal ion yielding material in particle form to the adhesive on the web" of Applicant's independent claim 8.

In regards to the KR 8902848 reference's disclosure of the adhesive, the Applicant respectfully submits under *In re Oelrich*<sup>2</sup> that the mere disclosure of an adhesive coating the inner side of the nonwoven fabrics is not sufficient to lead to the conclusion that the silver-added active carbon and untreated active carbon of the KR 8902848 reference are actually applied to the adhesive. Note per the Applicant's above argument that the KR 8902848 reference actually teaches away from the application of the active carbons to the adhesive through the disclosure that the mesh formed by KR 8902848's fabrics 11' and 11" already functions to prevent the active carbon from escaping or releasing from KR 8902848's filter 8.

In further regards to the Office's above rejections, on page 4, lines 3-6 of the Office Action dated June 28, 2005, in support of the Office's rejection, the Office stated:

"It is the Examiner's position that that the fused adhesive is dried inherently, since it is well known in the art that fusible or hot melt adhesive is dried (becomes non-tacky) after fusion to provide strong bondage to a substrate, as evidence by Minami (See column 1, lines 14-18; column 2, lines 6-8; column 3, lines 26-27) and Takahashi et al (See column 20, lines 15-22)." (Emphasis added.)

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<sup>2</sup> *In re Oelrich*, 212 USPQ 323, 326 (C.C.P.A.) (quoting *Hasggirg v. Kemmer*, 40 USPQ 665, 667 (C.C.P.A. 1939) ("Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient.")

The Applicant respectfully disagrees with the Office's above citation of Minami and Takahashi et al. as relevant art so as to establish inherency. The Applicant submits that the references of Minami and Takahashi et al. are not of relevant art. Note that the Applicant's invention, as claim in Applicant's independent claim 8, is direct to a method of applying a water treatment composition to an article for use in water purification.

It is submitted that the reference of Minami is not directed to articles for use in water purification but instead teaches "...an apparatus for binding piled sheets of paper or the like material at one edge surface or back thereof to form a book or the like." (See column 1, lines 3-5 of Minami.)

In regards to the reference of Takahashi et al., it is submitted that the reference of Takahashi et al. is also not directed to articles for use in water purification but instead teaches:

"... an enclosed non-aqueous secondary cell capable of shutting-off the electrical connections within the cell when the temperature and/or internal pressure thereof increase and more particularly to an explosion-proof valve structure used in the non-aqueous secondary cell." (See column 1, lines 5-10 of the reference of Takahashi et al.)

Since the references of Minami and Takahashi et al. each do not relate to the art of the Applicant's invention as disclosed in Applicant's independent claim 8, namely articles for use in water purification, the Applicant respectfully submits that the references of Minami and Takahashi et al. should not be cited to establish the inherency in support of the Office's rejection of the Applicant's claims.

It is for the above reasons that the Applicant submits that Applicant's independent method claim 8 is allowable over the reference KR 8902848, the reference of Minami and the reference of Takahashi et al.

**Rejection under 35 U.S.C. 102(b) to JP 78020780**

On page 4, lines 20-21 and page 5, lines 1-8 of the Office Action dated June 28, 2005, the Office rejected Applicant's claims 8 and 9 under U.S.C. 102(b) as being anticipated by the reference JP 78020780. The Applicant respectfully disagrees with the Office aforementioned rejection of Applicant's claims 8 and 9. Applicant's independent claim 8 calls for a "... method of applying a water treatment composition to an article ..." including the step of:

"... allowing the adhesive to dry to secure the metal ion yielding material to the web of material."

The Applicant submits that the reference JP 78020780 does not teach the above limitation of Applicant's independent claim 8. Referring to the abstract, note that JP 78020780 does not call for the drying of JP 78020780's binder in order to adhere JP 78020780's sintered powder to JP 78020780's base plate.

In regards to the Office's statement "... that 'adhering' involves 'drying', " (page 5, lines 4-5 of the present Office Action) the Applicant strenuously traverses the Office's aforementioned statement. It is submitted the process of adhesion does not always involve a drying process, as there are various adhesive that can be used for adhering members

together without drying. Example of the afore-mentioned includes adhesives that are used underwater.

Applicant's independent claim 8 also calls for a "... method of applying a water treatment composition to an article ..." including the step of:

"...forming the particle containing web into an article for use in water purification."

The Applicant submits that the reference JP 78020780 does not teach the above limitation of Applicant's independent claim 8. Note that although JP 78020780's abstract teaches the sterilisation element, JP 78020780's abstract is silent on how the sterilisation element is used once it is formed.

It is for the above reasons that the Applicant respectfully submits that Applicant's independent claim 8 is allowable over the JP 78020780 reference.

On page 6, lines 19-22 of the Office Action dated June 28, 2005, the Office rejected Applicant's claim 10 under U.S.C. 102(b) as being anticipated by the reference JP 78020780. The Applicant respectfully disagrees with the Office aforementioned rejection of Applicant's claim 10.

Applicant's independent claim 10 calls for a "...method of making an article for insitu water treatment ..." including the step of "...selecting a water insoluble solid structure." (Emphasis added.) The Applicant submits that the reference JP 78020780 does not teach

the aforementioned limitation. Referring to the abstract, note that JP 78020780 instead teaches a base plate such as a “flexible film.” The Applicant respectfully submits that a base plate comprising a “flexible film” or the like is not a solid structure.

Applicant’s independent claim 10 also calls for a “... method of applying a water treatment composition to an article ...” including the step of:

“...applying the water treatment material to the adhesive on said solid structure...”  
(Emphasis added.)

The Applicant submits that the reference JP 78020780 does not teach the above limitation. Instead, it is submitted that JP 78020780 teaches the simultaneous application of the sintered powder and the adhesive to the base plate through JP 78020780’s disclosure of “...adhering the sintered powder to a base plate (e.g. flexible film) with binder (epoxy resin). (Emphasis added, see JP 78020780’s abstract.) That is, JP 78020780’s binder is not applied to JP 78020780’s flexible film before the sintered powder is applied to the binder.

Applicant’s independent claim 10 further includes the step of:

“forming the structure into an article for placement into a body of water to thereby enable the structure to adhesively support the water treatment material thereon in a condition that maintains a water concentration of metal ions less than 1000 parts per billion (ppb).”

The Applicant submits that the reference JP 78020780 does not teach the above limitation of Applicant’s independent claim 10 as JP 78020780’s abstract is silent on how the sterilisation element is used once it is formed.

It is for the above reasons that the Applicant respectfully submits that Applicant's independent claim 10 is allowable over the JP 78020780 reference.

**Rejection under 35 U.S.C. 102(b) to JP 78020790**

On page 4, lines 9-17 of the Office Action dated June 28, 2005, the Office rejected Applicant's claims 8-10 under U.S.C. 102(b) as being anticipated by the reference JP 780100390. The Applicant respectfully disagrees with the Office aforementioned rejection of Applicant's claims 8-10. Applicant's independent claim 8 calls for a "... method of applying a water treatment composition to an article ..." including the step of:

"... allowing the adhesive to dry to secure the metal ion yielding material to the web of material."

The Applicant submits that the reference JP 780100390 does not teach the above limitation of Applicant's independent claim 8. Referring to the abstract, note that JP 780100390 does not call for the drying of JP 780100390's adhesive agent in order to adhere JP 780100390's silver salt to JP 780100390's substrate.

In regards to the Office's statement "... that 'curing involves 'drying','" (page 4, lines 13-14 of the present Office Action) the Applicant strenuously traverses the Office's aforementioned statement. It is submitted the process of "curing" does not always necessitate a drying process. In regards to the Office's citation of the abstract of reference JP 51067462, the Applicant respectfully notes that the Applicant was not provided a copy of reference JP 5106746. As such, no comments will be made to reference JP 5106746.

Applicant's independent claim 8 also calls for a "... method of applying a water treatment composition to an article ..." including the step of:

"...forming the particle containing web into an article for use in water purification."

The Applicant submits that the reference JP 780100390 does not teach the above limitation of Applicant's independent claim 8. Note that although JP 780100390's abstract teaches a resultant product comprising a sterilising element, JP 780100390's abstract is silent on how the sterilising element is used once it is formed, i.e. whether it is just placed in a water purification article or actually shaped or formed into a water purification article.

It is for the above reasons that the Applicant respectfully submits that Applicant's independent claim 8 is allowable over the JP 780100390 reference.

On page 4, lines 18-19 of the Office Action dated June 28, 2005, the Office also rejected Applicant's claim 10 under U.S.C. 102(b) as being anticipated by the reference JP 780100390. The Applicant respectfully disagrees with the Office aforementioned rejection of Applicant's claim 10.

Applicant's independent claim 10 calls for a "...method of making an article for insitu water treatment ..." including the step of:

"...selecting an adhesive from the group consisting of polyurethane, epoxy resin, polyvinyl acetate and polyvinyl alcohol." (Emphasis added.)

The Applicant submits that although the reference JP 780100390 teaches the use of an adhesive agent, the reference JP 780100390 does not teach an adhesive consisting of polyurethane, epoxy resin, polyvinyl acetate and polyvinyl alcohol.

Applicant's independent claim 10 also calls for a "...method of making an article for insitu water treatment ..." including the step of "...selecting a water insoluble solid structure." (Emphasis added.) The Applicant submits that the reference JP 780100390 does not teach the aforementioned as JP 780100390's abstract does not teach JP 780100390's substrate as comprising a solid structure.

Applicant's independent claim 10 further includes the step of:

"forming the structure into an article for placement into a body of water to thereby enable the structure to adhesively support the water treatment material thereon in a condition that maintains a water concentration of metal ions less than 1000 parts per billion (ppb)."

The Applicant submits that the reference JP 780100390 does not teach the above limitation as JP 780100390's abstract is silent on how JP 780100390's sterilising element is used and whether it is just placed in a water purification article or actually shaped or formed into a water purification article.

It is for the above reasons that the Applicant respectfully submits that Applicant's independent claim 10 is allowable over the JP 780100390 reference.

**Rejection under 35 U.S.C. 103(a)  
to JP 78020780 or JP780100390**

Applicant's method claims 8 and 9 stand rejected under U.S.C. 103(a) as being unpatentable over the reference JP 78020780 and Applicant's method claims 8-10 stands rejected under U.S.C. 103(a) as being unpatentable over the reference JP780100390.

In rejecting Applicant's method claims 8 and 9 as being unpatentable over the reference JP 78020780, the Office on page 5, lines 6-8 of the Office Action stated:

“..., it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used solvent based curable adhesive so that adhering would involve drying.”

In rejecting Applicant's method claims 8-10 as being unpatentable over the reference JP 780100390, the Office on page 4, lines 15-17 of the Office Action stated:

“..., it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used solvent-based curable adhesive so that curing would involve drying.”

The Applicant strenuously disagrees with the Office's above two statements. In the case of *In re Fritch*, the U.S. Court of Appeals Federal Circuit held that:

“Obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching or suggestion supporting the combination. Under section 103, teachings of references can be combined only if there is some suggestion or incentive to do so.”<sup>3</sup> (Emphasis added.)

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<sup>3</sup> See *In re Fritch*, 23 USPQ2d 1783, 1784 (C.A.F.C. 1992), citing *ACS Hosp. Systems, Inc. v. Montefiore Hosp.*, 221 USPQ 929, 933 (Fed. Cir. 1984).

In view of *In re Fritch*, the Applicant submits that there is no motivation or incentive for one of ordinary skill in the art of water purification apparatus at the time the invention was made to turn to an adhesive that requires a drying process for adhesion when an adhesive that does not require a drying process for adhesion can be used. The Applicant also submits that there is no motivation or incentive for one of ordinary skill in the art of water purification vessel at the time the invention was made to also turn to an adhesive that requires a drying process for curing when an adhesive that does not require a drying process for curing can be used.

It is for the above reason that the Applicant respectfully submits that Applicant's claims 8 and 9 are allowable over the reference of JP 78020780 and that Applicant's claims 8-10 are allowable over the reference of JP780100390.

**Rejection under 35 U.S.C. 103(a) to combination of the references of KR 8902848 and Oehler et al.**

Applicant's method claims 8 and 9 stand rejected under U.S.C. 103(a) as being unpatentable over the reference KR 8902848 in view of the reference of Oehler et al. (U.S. Patent No. 5,820,927). In rejecting Applicant's claims 8 and 9 to the combination of the references KR 8902848 and Oehler et al., the Office on page 5, lines 18-21 of the Office Action held:

"It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used a solution of adhesive such as ethylene vinyl acetate in KR 8902848 instead of hot melt adhesive with the expectation of providing the desired securing of the activated carbon, as taught by Oehler et al. (Emphasis added.)

The Applicant strenuously disagrees with the Office's above holding as the use of Oehler et al.'s ethylene vinyl acetate teaches away from the formation of KR 8902848's purification filter. Referring to Figures 3, 4, and 6 of the KR 8902848 reference, note that the KR 8902848 reference shows for a filter 8 comprising a pair of non-woven fabrics 11' and 11" bonded to each other on their edges to form a pocket for supporting untreated activated carbons 12" and silver-added activated carbons 12' therein. Referring to the disclosure on page 4, lines 24-26 of the Applicant's translation of the KR 8902848 reference, further note that the KR 8902848 reference specifically teaches that:

"... the mesh of the fabrics is finer than the activated carbon, which thereby is prevent from being release." (Emphasis added.)

In regards to Oehler et al.'s use of the ethylene vinyl acetate, the Applicant notes that Oehler et al. specifically teaches that the ethylene vinyl acetate is used to form an adhesive layer within the pores of Oehler et al.'s foam support body 20 in order to impregnate Oehler et al.'s granular particles 30 within the pores of Oehler et al.'s foam support body 20. (Column 4, lines 14-45.)

In view of the above, the Applicant submits that the use of Oehler et al.'s ethylene vinyl acetate in KR 8902848 is not proper as KR 8902848 specifically calls for the mesh of KR 8902848's fabrics as being finer than the activated carbon thereby preventing the activated carbon from passing through. If the activated carbon cannot pass through the mesh of KR 8902848's fabrics, the Applicant that the aforementioned thus prevents the impregnation of the activated carbon within KR 8902848's fabrics.

In further regards to the Office's above rejection, it is submitted that the reference of Oehler et al. does not teach the step of "... allowing the adhesive to dry to secure the metal ion yielding material to the web of material" as called for in Applicant's independent claim 8. Note that the reference of Oehler et al. calls for the drying of the foam support body in order to "...evaporate remaining solvent and contract the foam support body 20 back to substantially its original volume..." instead of for the drying of the adhesive. In regards to the firming of the adhesive (column 4, line 42), the Applicant submits that the firming of Oehler et al. is caused by the contraction of the foam support body 20 and not the result of any drying of the adhesive.

It is for the above reason that the Applicant respectfully submits that Applicant's claims 8 and 9 are allowable over the combination of the references of KR 8902848 and Oehler et al.

**Rejection under 35 U.S.C. 103(a) to combination of the references of KR 8902848, JP 780100390, or JP 78020780 and Rosenblatt**

Claims 8-10, and 12 stand rejected under 35 U.S.C. 103(a) as being unpatentable over the references KR 8902848/JP 780100390/ or JP 78020780 in view of the reference of Rosenblatt (U.S. Patent No. 6,365,169).

In rejecting the above, the Office on page 6, lines 9-13 of the Office Action stated:

"It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used PVA as an adhesive in KR 8902848 and Minami or Takahashi et al together with iodine and applied by spraying since Rosenblatt teaches that PVA adhesives together with iodine and other antimicrobial components can be used in making water filters and can be applied by spraying."

The Applicant disagrees with the Office's above contention that using PVA, taught by Rosenblatt, as an adhesive in KR 8902848 and Minami or Takahaski et al would make Applicant's claims 8-10, and 12 obvious.

Referring to Applicant's independent claim 8, note that independent claim 8 includes the steps of "applying a metal ion yielding material in particle form to the adhesive on the web;" and "allowing the adhesive to dry to secure the metal ion yielding material to the web of material." (Emphasis added.) Referring to Applicant's independent claim 10, note that independent claim 10 includes the steps of:

"... applying the water treatment material to the adhesive on said solid structure; allowing the adhesive to set to thereby secure the water treatment material to the solid structure;" (Emphasis added.)

The Applicant submits that using PVA in KR 8902848 and Minami or Takahaski et al as an adhesive does not make the above limitations of Applicant's claims 8 and 10 obvious. Note that Rosenblatt does not call for the application of the iodine, which Rosenblatt uses as a disinfectant, to the PVA locate on Rosenblatt's substrate as being in particle form. Rosenblatt instead teaches the "complexing" of iodine in solution or liquid form to Rosenblatt's substrate. (See column 3, lines 43-45 of Rosenblatt.)

The Applicant also submits that using PVA in KR 8902848 and Minami or Takahaski et al as an adhesive does not make the above limitations of Applicant's claims 8 and 10 obvious as Rosenblatt does not call for the drying or the curing of his PVA with the iodine applied thereto in order to secure the iodine to Rosenblatt's substrate. Note that Rosenblatt instead

teaches that the PVA is dried and cured to the Rosenblatt's substrate before the iodine is applied thereto. (See column 3, lines 39-45 of Rosenblatt.)

In further regards to independent claim 10, Applicant's independent claim 10 further includes the steps of:

"... forming the structure into an article for placement into a body of water to thereby enable the structure to adhesively support the water treatment material thereon in a condition that maintains a water concentration of metal ions less than 1000 parts per billion (ppb)." (Emphasis added.)

The Applicant submits that using PVA in KR 8902848 and Minami or Takahashi et al as an adhesive does not make the above limitation of independent claim 10 obvious as the references KR 8902848, Minami, Takahashi, Rosenblatt each do not teach the step of forming a structure that can adhesively support a water treatment material thereon in a condition that maintains a water concentration of metal ions less than 1000 parts per billion (ppb).

It is for the above reasons that the Applicant respectfully submits that Applicant's independent claim 10 is allowable over the references of KR 8902848 and Minami or Takahashi et al in view of the reference of Rosenblatt.

In further regards to Applicant's claims 9 and 12, Applicant's dependent claim 9 depends on Applicant's independent claim 8 and Applicant's dependent claim 12 depends on Applicant's independent claim 10. Since Applicant's independent claim 8 and Applicant's independent claim 10 are allowable for the reasons given above, Applicant's dependent claims 9 and 12 should also be allowable.

In view of the above, it is submitted that the application is in condition for allowance.

Allowance of claims 8-10 and 12, as amended, is respectfully requested. Applicant has enclosed a version of the amendment showing changes made with this response.

Respectfully submitted,

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